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10/694,772	10/29/2003	Yosuke Miki	71450.0009	6726

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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT PAPER NUMBER

2859

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/694,772

Applicant(s)

MIKI ET AL.

Examiner

Gail Verbitsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04/16/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 2-5 are objected to because of the following informalities: "Claim" in line 1 should be replaced with –claim—because only the first letter of the claim can be capitalized. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Potega (U.S. 6152597).

Potega discloses in Figs. 1, 3, 6 a device wherein a conductor layer (aluminum foil/ metal foil) creating two conductive traces between which can be a thermally resistive ink (thermistor element 109, temperature detecting portion) (col. 14, lines 57-64) which exhibits a known (proportional relation) electrical resistance characteristics (specific electric resistance in response to when temperature changes (col. 14, lines 8-14), the conductor layer (two conductive traces) and the thermally resistive ink/ thermistor element are positioned on a flexible/ conformable substrate having wirings and circuit elements, as shown in Fig. 6.

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For claim 3: the temperature-detecting portion is formed in a pattern of wiring/ strips shaped as a meander, as shown in Fig. 1.

Potega does not explicitly teach the limitations of claims 4 and 5.

For claim 4: the particular length of the temperature detecting portion, i.e., 50 mm or more, as stated in claim 4, absent any criticality, is only considered to be the "optimum" length of the temperature detecting portion used by Potega that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. **See *In re Boesch*, 205 USPQ 215 (CCPA 1980).**

For claim 5: the particular pitch, space between the adjacent parts of the temperature detecting portion, i.e., 100microns or more, as stated in claim 5, absent any criticality, is only considered to be the "optimum" pitch of the temperature detecting portion used by Potega that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. **See *In re Boesch*, 205 USPQ 215 (CCPA 1980).**

4. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer (U.S. 3966578).

Sommer discloses in Figs. 4-5 a device comprising a substrate 11, a stainless steel mask (foil) 18 is placed over the substrate 11 (col. 2, lines 56-58) so as to define an area where a thermistor material (temperature detecting portion) will be deposited. Then metal electrodes are deposited on said mask (stainless foil) to provide an electrical contact. It is known, that a thermistor is a temperature-sensing element whose electrical resistance (specific for specific temperature ranges) changes in relation to temperature change.

Sommer does not explicitly teach a flexible wired circuit board, as stated in the preamble of claim 1.

With respect to the preamble of claim 1: the preamble of the claims does not provide enough patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and a portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. Kropa v. Robie, 88 USPQ 478 (CCPA 1951).

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (U.S. 5823680) [hereinafter Kato].

Kato discloses in Fig. 1 a device comprising a conductor layer having a temperature-detecting portion 2 and is formed a metal (platinum) comprising film. An (specific) electrical resistance of the temperature detecting portion/ resistor 2 is in proportional relation with temperature (col. 3, lines 51-53).

Kato does not explicitly teach a flexible wired circuit board, as stated in the preamble of claim 1.

With respect to the preamble of claim 1: the preamble of the claims does not provide enough patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and a portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. Kropa v. Robie, 88 USPQ 478 (CCPA 1951).

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heine et al. (U.S. 20030152130) [hereinafter Heine].

Heine discloses in fig. 2 a device comprising a conductor layer (metal film/ foil) 3 having a temperature sensing/ detecting portion. The conductive layer, inherently, changes its resistance (specific) proportional to a temperature change.

Heine does not explicitly teach a flexible wired circuit board, as stated in the preamble of claim 1.

With respect to the preamble of claim 1: the preamble of the claims does not provide enough patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and a portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. Kropa v. Robie, 88 USPQ 478 (CCPA 1951).

7. Claims 1, 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmermund (U.S. 6341892).

Schmermund discloses in Fig. 2 a device comprising a substrate/board having a conductive layer comprising a temperature detecting portion /wiring made of a thin film platinum/ metal foil) 16 formed in a serpentine pattern (wiring folded in such continuous form that adjacent parts of the wiring parallel are spaced apart from each other at a predetermined interval), as shown in Fig. 2. The portion 16 inherently changes its resistivity (specific resistance) proportionally to a temperature change.

Schmermund does not explicitly teach a flexible wired circuit board, as stated in the preamble of claim 1.

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With respect to the preamble of claim 1: the preamble of the claims does not provide enough patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and a portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. Kropa v. Robie, 88 USPQ 478 (CCPA 1951).

Schmermund does not explicitly teach the limitations of claims 4 and 5.

For claim 4: the particular length of the temperature detecting portion, i.e., 50 mm or more, as stated in claim 4, absent any criticality, is only considered to be the "optimum" length of the temperature detecting portion used by Schmermund that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. See In re Boesch, 205 USPQ 215 (CCPA 1980).

For claim 5: the particular pitch, space between the adjacent parts of the temperature detecting portion, i.e., 100microns or more, as stated in claim 5, absent any criticality, is only considered to be the "optimum" pitch of the temperature detecting portion used by Schmermund that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. See In re Boesch, 205 USPQ 215 (CCPA 1980).

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07296786A [hereinafter JP] in view of Potega.

JP discloses in Fig. 1 a device in the field of applicant's endeavor comprising a an integrated wiring such as a flexible printed board (flexible wiring board) comprising a temperature sensor whose temperature detecting portion is a thermistor.

JP does not explicitly teach the particular conductive layer, as claimed by applicant in claim 1.

Potega discloses in Figs. 1, 3, 6 a device/ temperature sensor wherein a conductor layer (aluminum foil/ metal foil) creating two conductive traces between which can be a thermally resistive ink (thermistor element 109, temperature detecting portion) (col. 14, lines 57-64) which exhibits a known (proportional relation) electrical resistance characteristics (specific electric resistance in response to when temperature changes (col. 14, lines 8-14), the conductor layer (two conductive traces) and the thermally resistive ink/ thermistor element are positioned on a flexible/ conformable substrate having wirings and circuit elements, as shown in Fig. 6.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the temperature sensor, disclosed by JP, with a temperature sensor comprising a thermistor and conductive layer, as taught by Potega, because both of them are alternate types of temperature sensing devices which will perform the same function, of sensing temperature of an object of interest, if one is replaced with the other.

#### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

Gail Verbitsky  
Primary Patent Examiner, TC 2800



July 14, 2004



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